Better Crops

The Pocket Book of Agriculture.

November 1925 10 Cents

Roads—and Monuments—Kernels from Cobb—New Peaches from Old Trees—Tune In! KSAC Broadcasting—in this issue.

NOT FERTILIZED
Fertilized with 8% phosphoric acid 2½% nitrogen, and 5% POTASH rate of 1200 lbs. per acre
Fertilized with 8% phosphoric acid 2½% nitrogen, but NO POTASH rate of 1200 lbs. per acre

Cabbage Pays
$43.60 extra per acre

A very slight change in fertilizer oftentimes makes a big change in the size and quality of the crop.

The experience of Mr. W. E. Hudson, a cabbage grower in Jackson County, Texas, gives us a good example.

Mr. Hudson applied to one plot a mixture containing 8% phosphoric acid, and 2½% nitrogen at the rate of 1200 lbs per acre. The crop weighed 5,920 lbs.

On an adjoining plot, Mr. Hudson applied the same mixture as above—**but with 5% potash added** —and the crop weighed 8,280 lbs. (2,360 lbs. more than where no potash was applied).

On each plot, soil was sandy with yellow clay subsoil. After deducting the cost of the potash in the high grade fertilizer, Mr. Hudson's profit was $43.60 extra per acre. Potash Pays.

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Better Crops

The Pocket Book of Agriculture

VOLUME V NUMBER THREE

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Editorial Office: 10 *Bridge Street, New York*

"Turkey in the Straw" may be all right for some folks, but Turkey IN THE PLATTER, UM-M-MM!! Here's wishing you the same on November twenty-sixth.

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VOL. V NEW YORK, NOVEMBER, 1925 No. 3

¶ *In which our popular essayist tells us some things we know, but did not know we knew, about*

ROADS-- *and* Monuments

By Jeff McDermid

THE most important things in the world are those which furnish speedier transmission—of ideas or goods.

The greatest inventions are those which whisk the written word, or spoken, on swifter wings; or that hasten the delivery of things from where they are plentiful and unwanted to the place they are needed because scarce.

The telephone, telegraph, radio, linotype, rotary press, locomotive and the automobile are the seven wonders of our civilization—in fact the mothers of our progress.

And the last of these is not the least.

The automobile is responsible for more changes in our mode of living than any other invention. I trust that no one can successfully refute this.

Yesterday I drove the last of three hundred miles on the second layer of a road compared to which "the rocky road to Dublin" was a silk-lined, velvet carpet. I say I rode on the second layer because the first layer was suspended about six feet in the air in the form of dust!

A ROAD is to the automobile as the rails are to a locomotive—comfort in driving is furnished by the road, not the car. For with three sets of trick snubbers and equilibriators, one to keep you from springing up, a second to keep you from smashing down, and another to keep you from slipping sidewise, some roads I have met prove the chap wonderfully accurate who said, "God made the country, man the cities, and the Devil the detours!"

A road is a highway, a place upon which to travel, and if you cannot travel on a road, it is about as useless as a watch without hands—it is going but you will never know where.

By a peculiar twist or quirk of fate, the road I traveled yesterday—if hitting between bumps occasionally may truthfully be termed traveling—went through Haverford, Pennsylvania.

And Haverford is the home of a man to whom this Nation has laid down an artificial stone monument a hundred thousand miles long—and as wide as four flivvers flocked together. Haverford is honored by being the home of Robert W. Leslie, the Father of the Cement Road.

Leslie is my friend—a young man of seventy-four who is so unusual that it is the dream of my life to be permitted to write his autobiography. I am intelligent enough to know that the man who writes a book gets more out of it than the man who reads it. And I look forward to the delightful task of interviewing this Colossus of Roads preparatory to writing a memorable, entrancing story of a useful life.

Leslie does not know which came first, the egg or the hen; but he does know which came first, the car or the road. For the road has always been with us, the car arrived but yesterday.

WITHOUT *good* roads, flivvers would be futile. It is now well known that splendid roads lure more cars onto them than Detroit can turn out. And although the most recent billboard I have seen said, "Two thousand more flivvers on the road since yesterday," I am of little doubt that this is but a rare advertising man's unchallenged hokus pokus. The fact is, I believe, that there are not quite so many flivvers as we think. We see them once as we honk by, and then we see them again as they rattle merrily past while we tinker with *our* car. We are but the innocent victims of a motor mirage.

How far the spreading ripples from a stone cast in the cosmic brook do spread! Without Leslie and his cement road Detroit would be but a Saturday night village.

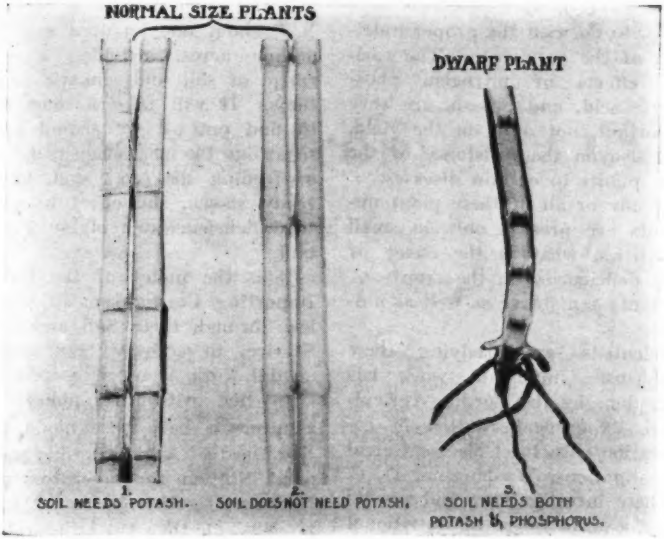
My friend Rus Rees, under whose watchful, eagle eye fleet Packard cars (advt.) roll to the shipping platform champing at their gears, once said, "but Detroit produces thousands of other things beside cars."

To which I retort: "Yes, I know, I have ridden in some of them!"

The road, with the fast automobile upon it, carrying the doctor to his sufferer, the carpenter to his work, the roll of rugs to the store, the clerk to his office, or the shopper to her *bete noir*—has etched itself into the *Zeitgeist* as no previous transmission device has done.

It has brought joy, self-reliance, health. It has made farm life tenable and city life livable. It has permitted the city worker to build in the country, and the farm worker to get just

(*Turn to page* 46)



¶Corn plants 1 and 2 were grown in the same soil under similar conditions, except plant 2 was given potash at the rate of 250 pounds per acre. Plant 1 was normal in size but the yield was low, due to the slow maturing of the ears, while the yield of plant 2 was normal. Note the dark nodes (they are purplish-brown in color) in the longi-section of the stem of plant 1, indicative of the need of potash. ¶The dwarfed, low-yielding condition of plant 3 combined with the darkened nodes indicates the need of both potash and phosphoric acid.

Solving

CORN *Nutrition* PROBLEMS

By G. J. *Callister*

IF we could put all our corn-fields together, it would make one of the biggest fields on our National farm—over one hundred and five million acres—quite a sizeable field requiring a lot of hard work every year.

The yield and quality of the crop produced in the fields is a matter of some concern, not only to the farmers who own it, but to everybody. Any means by which this field can be worked more efficiently, producing more corn for less labor and money, or scientific assistance given in helping to solve its many problems, is important work and merits our support and continued interest.

A LOT of such problems have to do with the proper nutrition of the corn crop. The various effects of nitrogen, phosphoric acid, and potash, are very important, not only on the yield, but also on the resistance of the corn plants to certain diseases.

If any or all of these plant nutrients are present only in small quantities, what is the effect of such deficiencies on the crop?

Plants can starve as well as animals.

Scientists are studying these problems. Important work has been done by the Purdue Agricultural Experiment Station in cooperation with the Office of Cereal Investigations, Washington, D. C.

These investigations and results cover a wide range of nutritional problems. Among the results obtained, they have found that a deficiency of either available potash or phosphates has a marked effect on the resistance of corn to root rot disease. When potash deficiencies occur, it has been found that iron accumulates in the nodal tissues of the corn plant. These metallic accumulations can be seen by cutting the corn plants lengthwise. They cause a dark, purplish-brown discoloration of the joints, and ultimately, a disintegration of the joint tissues.

Corn plants heavily laden with such accumulations in the joints have been found to succumb readily to root and stalk rot. These injuries affect the ear-producing powers of the plants and consequently lessen the yield. Similar conditions of malnutrition have been observed in sugar beets, sugar cane and cotton.

The problems of crop nutrition are therefore of immediate interest to the practical man.

We need to know more about such problems.

OUR corn field is a big one, about one hundred and five million acres, including a wide range of soil and climatic conditions. It will take a long time to find out all we should know regarding the most efficient method of feeding the crop, and, as already shown, the effect of plant food deficiencies is highly important.

It is the policy of the Potash Importing Corporation of America, through their Soil and Crop Service, to actively help experimental work as much as possible.

In line with this policy, arrangements have been made with the Purdue Agricultural Experiment Station for laboratory and field investigations on a more extended scale than has hitherto been possible.

The purpose of this work is to conduct field and laboratory studies on potash deficiency problems on various crops—but especially on corn. Two men will be employed in laboratory work, and part of the time two in field work. In these investigations, studies will be made of the soils and of the plant —that is from a soils and plant physiological viewpoint.

The essential laboratory work will be correlated to practical crop production by conducting field surveys.

The purpose of the surveys is to check the results of laboratory work, to provide a practical basis for giving definite knowledge on malnutrition symptoms, and what such symptoms indicate. Some idea will be gained of the prevalence or otherwise of plant nutrient deficiencies, to what extent there are evidences of potash starvation. It will also be interesting to know if it is possible to

(*Turn to page* 38)

¶ *Wicomico County folks thrive on—*

Kernels from COBB

By P. M. Farmer

Washington Correspondent

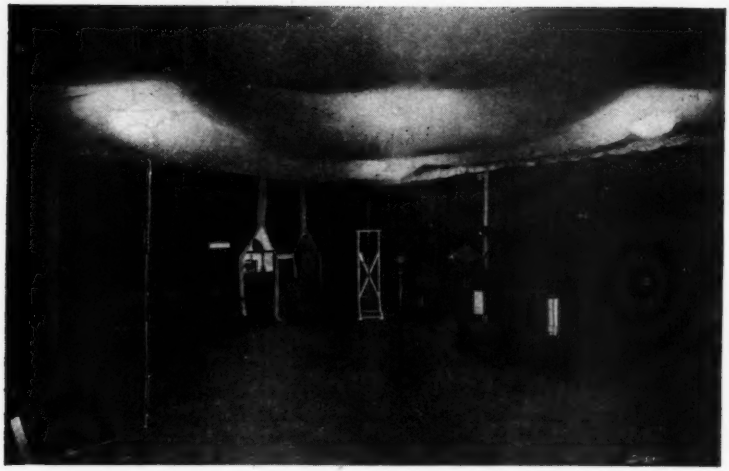
OF late there has been not a little in the press about growing corn without a cob. But down in Wicomico County, on the Eastern Shore of Maryland, the farmers, and the town folks as well, so far as P. M. F. has been able to learn, have no desire to try to grow any crop without one, that particular one being George Cobb, the county agent.

However, George's popularity may not be sufficient reason for writing him up. But his success as a publicity man or columnist, to describe him more accurately, is such that the world ought to know more about his method.

Soon after Cobb became advisor to the Wicomico farmers he began writing for the local papers, turning out seasonable articles on the various crops and local problems, but according to his own admission, these essays were a flop.

(*Turn to page* 35)

Cobb (at left) hitting the High Spots



TUNE IN!

Station

STATION KSAC, the radiostation of the Kansas State Agricultural College has just begun the third year of broadcasting regular educational courses. Broadcasting of timely information for farmers, as well as courses of lectures contributing to a rather elaborate educational program, was begun by this institution as an experiment some years ago. The response to this effort, manifested by more than 5,000 letters of indorsement, has convinced the Kansas State Agricultural College of the possibilities of this service and the result is a more ambitious undertaking for the coming year.

In addition to the timely topics or question box and the regular courses of lectures on various subjects which have been regular features heretofore, a program for rural schools, a morning housewives program and a matinee program of current topics of interest

¶ *And now we sit contentedly at home. The big cosy arm chair — shoes off and feet toasting to a cheery log fire.*

All ready — put on the ear phones — snap on the juice — adjust the r h e o s t a t s — slowly t w i s t the d i a l s and Presto, we are attending our class in Botany. Now Dear Reader I ask you, isn't this a pleasant way to take education?

Jeff

KSAC Broadcasting

By H. J. C. Umberger

Dean and Director, Extension, Kansas Agrcultural College

to women will be regular features the coming year.

In the main the program for the coming year will be devoted to rural interests. At 9:00 a. m. an inspirational and educational program will be given for twenty-five minutes consisting of opening exercises, a music lesson, talks on birds, travel, biography, books to read, current events, the agricultural primer, (discussing in turn poultry, crops, dairying, horticulture) and calisthenics conclude this program; at 10:00 a. m. the Housewives Half Hour consisting of a story serial, backyard gossip, general discussion on household management, health and sanitation, clothing problems, household decoration, and child care; at noon the farmers' questions are answered and timely information broadcast together with a market summary.

Matinee programs provide specialties for enriching the club meetings of both town and rural women. High school credit courses in English Literature II and III, Civics and Botany are broadcast regularly in addition to a football lecture course. Lessons in color

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Rust *and* POTASH

By C. A. Whittle
Southern Editor, Soil Improvement Committee

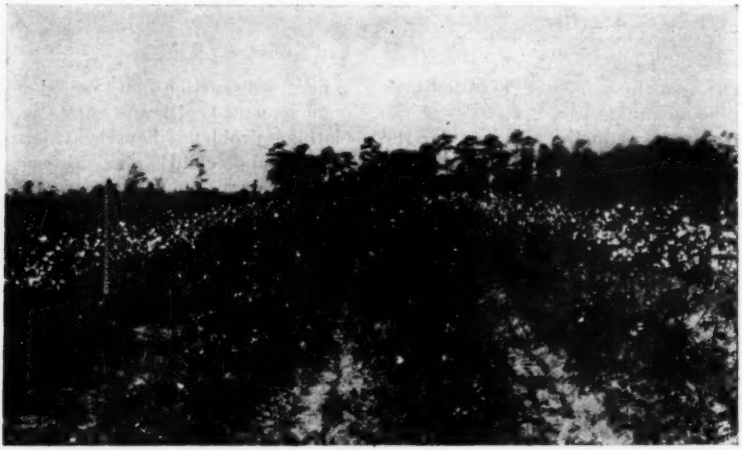
AGAIN there was widespread evidence of potash hunger of cotton throughout the cotton belt. Last year it was almost equally severe. The loss from rust (potash hunger) runs into millions of dollars each year, all of it easily preventable by putting into the fertilizers sufficient potash to supply the needs of the crops.

Again the experiment station plots show unmistakably that rust is potash hunger. Where potash is applied there is no rust and alongside where no potash is applied there is rust.

At the Poplarville, Mississippi Experiment Station where potash was left out of the complete fertilizer the yield of seed cotton was 684 pounds whereas alongside where potash was included in the fertilizer the yield of seed cotton was 1080 pounds. This is typical of what may be expected on the sandy loams of the South during a dry year. It is less striking during wet years but the evidence of rust or potash hunger is always to be seen on sandy soils where no potash is applied or where not enough of it is used in the fertilizer.

On clay soils the rust is not so much in evidence as a rule but this year rust was reported quite prevalent in those soil regions.

To the casual observer or to one who does not know the symptoms of rust, the trouble is spoken of as "weather damage" or "burning of the leaves" by the drouth. But if one will take the pains to look closely he will find that the outer



Defoliation as a result of potash starvation. This field received 240 pounds each of cottonseed meal and phosphoric acid to the acre, but no potash.

edges of the leaves paled out into splotches or mosaic which gradually extend inward, the leaves curling inward as the disease spreads until the whole is brown and dead. The leaves shed sometimes very severely. The fruiting of the cotton is then halted and bolls do not develop properly.

With potash hunger properly attended to the cotton plants keep green, healthy, growing and fruiting until frost.

RUST is not confined to cotton but shows up markedly on alfalfa, soy beans and other legumes. The symptoms are the same as that of cotton. But rust of wheat, oats and rye is different. It is a fungous trouble and not primarily a sign of potash hunger, but authorities are agreed that potash adds to the strength and health of plants and thus enables plants to withstand attacks of disease.

Soils that analyze high in potash content such as the clays have shown that the natural potash of the soil does not come into available form fast enough to prevent rust. It is therefore not so much what a soil contains, as shown by laboratory analysis, as what the plant can extract from the soil by its laboratory processes, that tell the story.

Another misconception as to the value of potash as a fertilizer has arisen as the result of applying potash alone to a soil. On most soils there are other plant food deficiencies which have to be supplied in order to make the applied potash usable. Single shot applications of potash can mean nothing but potash put on where other elements of plant food are applied to make it certain that none of them are limiting factors, will mean something definite as to whether or not potash will pay in a fertilizer.

In some regions potash is not recommended by some of the agricultural authorities. In a number of places in these regions cotton is signaling potash hunger and suffering from loss by rust damage. In such places if potash did not materially increase the yield, during a drouthy period at least, potash would save enough cotton to pay for itself several times over.

This field received in addition to the 240 pounds each of cottonseed meal and phosphoric acid, 240 pounds of potash to the acre. Note the healthy condition of the plants.

New PEACHES *from* OLD Trees

By J. *William* Firor

County Agent, Athens, Georgia

WALTER MATTHEWS, a farmer from an adjoining county, came to my office one day last July and said, "I have been looking for you for several weeks. I want to show you something. Come out to my car." We went to his car which was parked in front of my office. He had about fifty gallon-baskets of as luscious, highly colored, and as large peaches as I had ever seen.

After I had feasted my eyes on them, Mr. Matthews remarked, "Do you remember our talk down at the county farm last January? You told me not to cut down those old peach trees on the hill back of my house; that if I would spray them and give them proper attention, I would get good peaches. I did not have much faith in doing anything with those old trees, for they have been out there for at least 12 years and they have not done much in all that time.

"I VENTURE to say that during the last five years we have not gotten a single perfect peach from all of the trees, including some 20 or 30 besides the trees that are there now. I have been cutting down peach trees for the last three or four years. However, I followed your instructions and you see the results yourself. It is easy to sell these peaches, too. Everybody in town seems to want them because they are free from worms and rot and keep for days after gathering."

Mr. Matthews took his peaches to a hotel across the street and sold the entire lot for $15.00. After eating all they wanted at home and canning over two bushels, by the end of the season, Mr. Matthews had sold $162.00 worth of peaches.

Mr. Matthews' experience is just one illustration of the change that has taken place in the home orchards of this county, during the last few years, and to some extent in the counties adjoining us.

In this county alone there are about 1000 plantings that originally were intended to be home orchards. The fruit trees were planted in the orchards primarily to give abundant fruit to the family

One of O. T. Adams' money-makers

during the summer and to furnish a surplus to be canned for winter use. Prior to 1923, practically none of these orchards produced enough for the families of the farmers owning the orchards. Seldom was there a surplus to save for winter or to sell in the towns. The same was true of the surrounding territory.

But a change is taking place. I know of about 100 farmers who have made successful efforts to care for the trees in their home orchards this season. A few illustrations will show the results obtained by these people.

PAUL FLEMING, a member of the Clarke County Pig Club in 1924, attended a pruning and spraying demonstration in the spring of that year. He went home and sprayed and pruned some real old peach trees. These trees had been neglected for years and were in extremely poor condition. They were only half of the old trees on the farm. From the trees that Paul worked with the family got an abundance of fruit for their use, and Paul sold over $100.00 worth of peaches alone at the Athens Curb Market during the summer of 1924.

Mrs. W. L. Childs, a large poultry raiser about 10 miles southeast of town, had a few scale infested peach and plumb trees which were absolutely non-productive and on the verge of dying, when I got to them in the spring of 1923. Mrs. Childs followed instructions faithfully. Results: last year she had all of the fruit she could use. This season some of the old trees bore three and four bushels of perfect peaches. She had too many peaches for home use and had to hunt up old friends to help her use them.

Still another illustration: Henry Dunlap, a poultryman near Winterville, Ga., had 40 peach, plum and apple trees that were about to go out. He also had a few grape vines. We had to cut some of the peach trees back to mere stubs to get the dead wood removed in 1923. These trees, with the exception of three, have made new heads and are in good condition now. One of these old scale infested peach trees bore enough peaches to bring Henry $12.45 at the curb market this summer. Mrs. Dunlap canned 75 quarts. Henry's cash return this season was $106.00.

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The Abomination Called New Thought

By E. W. Howe

I DO not believe in the abomination called New Thought. I write no new and profound symphonies, but persistently sing the old songs the world has accepted as a basis for human conduct. I produce no new literature; I never have, and do not intend to. The opinions I express are not mine. Except when I am mistaken in interpreting history, the opinions I express are the opinions of the world. I do not know of a single new thought I accept, or an old one I reject if it has been accepted many years by a majority of intelligent men.

I believe in any system the people have tried a long time, and found expedient. The plans men have adopted are better than plans they have talked about, and neglected to put into effect because of doubts of their utility. There is something wrong with every doctrine the majority does not put into effect. I do not believe that mankind, after experimenting with life thousands of years, finally adopted the worst system, and steadily refuses to put into effect a better. I am a believer in the people. Whatever they have worked out in their homes, in their places of business, and on the highway and market, I accept as the best they can do.

Anyone who bets on his judgment against the judgment of the world will lose. In everything in which a man is interested, the world knows what is best for him. It has learned from experience, best of all teachers. Millions of men have lived millions of years, and tried everything. The results of these experiments have passed down from the first to the last generation. Everywhere there is an undercurrent of truth of which anyone may take advantage.

There are many things you do not know. Who does know them? Those who have lived longer, had more experience, or have greater or clearer brain power. There are such men in every community willing to talk, if you will listen.

Everything of value gets into conversation and print. Because of its value, it travels. Some one in your community will read or hear it, and repeat it. The old sayings we quote from day to day represent the wisdom of countless ages.

Make new efforts, attempt to find better ways, certainly, but unless you have the encouragement of the best old thought, you will fail. A new thought is dangerous until the people have picked at it at least a hundred years.

GRAY Goes to P.I.C.A.

SAMUEL D. GRAY recently joined the Soil and Crop Service of the Potash Importing Corporation of America as agronomist. It is felt among agricultural workers, where Gray is well-known, that the company is fortunate in securing the services of a man so thoroughly trained.

Mr. Gray was born and reared on a farm in Southern Maryland. His early schooling was in the little log schoolhouse typical of that region, in an atmosphere of real plantation life. The home farm of something over 1,000 acres is what remains of the whole county, formerly a land grant to forbears on his mother's side—to be exact—granted in 1634 by King James of England to Bishop Clagette, first bishop to this country from the Church of England.

Early in his youth, Gray elected agriculture as his life's work and all of his time during vacations while at the University and since have been spent on the home farm. It was on this farm that the first successful field of alfalfa over one acre in size in Maryland was grown. Twelve acres of the crop were planted by Gray in 1916 and produced abundantly from three to four cuttings a year until 1924, when it was plowed for the first time.

He entered the University of Maryland as a student of agronomy in the fall of 1906, graduating with honors in 1910—B. S. degree.

Immediately after graduating he was appointed Field Agent, United States Department of Agriculture, and for nearly two years was in charge of rice investigations in Texas. As a result of experimental work conducted in Texas, the production of rice became in a very few years one of the state's leading agricultural enterprises.

Following associations formed in Texas, Gray was appointed Supervisor of Vocational Education in Maryland, which position he held until January, 1914, when he resigned to complete work for a Master's Degree at the University of Maryland, receiving the degree in June of that year.

From June, 1914, to September, 1916, he traveled extensively in South America and the West Indies, and was Assistant Professor of Agronomy at the University of Porto Rico from September, 1915, to September, 1916.

In September, 1916, Gray was appointed Associate Agrostologist, Office of Forage Crop Investigations, United States Department of Agriculture.

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¶The odoriferous Skunk is about to come into its own. Read Uncle Sam's suggestions about this "pretty pussy" and other fur bearers.

Conserving Furs for Madam

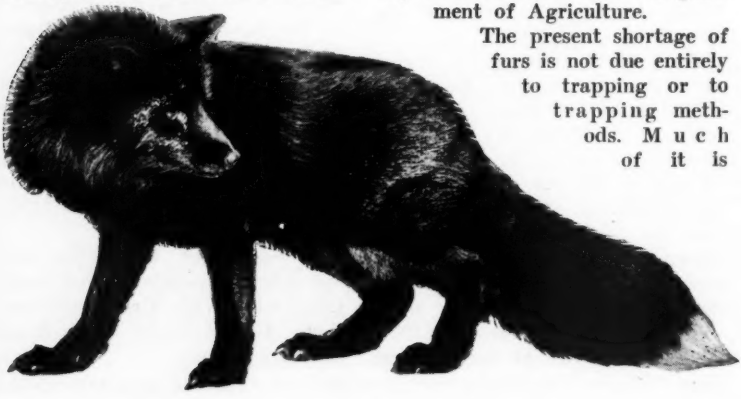
By *Frank G. Ashbrook*

In Charge Fur Resources, Bureau of Biological Survey, U. S. Department of Agriculture.

THE fur resources of the United States have gone too long without receiving the full attention they deserve.

This may be attributed largely to the fact that the fur trader of the past was interested chiefly in the quantity of pelts he could collect, and the manufacturer cared little about the origin of his raw material. Europe was so long supreme in fur dressing that American furriers came to regard the Old World as the essential source of their supplies. When finally the dressing of furs became an established industry in the United States, it was discovered that some of the more valuable fur animals had almost disappeared from our forests and streams, and that the northern Canadian Provinces remained the most important source of fine furs.

True, the muskrat, the skunk, and a few other species are left in considerable numbers, but the remnants of our once rich fur resources are fast dwindling under the conditions which have prevailed during the past century. Governmental aid in the study and conservation of our fur-bearing animals has been one of the authorized projects of the Biological Survey of the United States Department of Agriculture.



The present shortage of furs is not due entirely to trapping or to trapping methods. Much of it is

caused by our wasteful methods of handling important natural resources. Conspicuous among these are our indiscriminate felling of old forests, draining marshes, and other activities whereby the fur-producing areas have been greatly reduced. The fact that trappers so long plied their trade out of season without hindrance is another cause of the shortage and one which still needs corretion in many parts of the country. A bounty system which offers rewards for killing valuable fur animals at any season of the year has contributed its share in stimulating the destruction.

While the prospects for an adequate future supply of furs in the United States are not promising, they are not entirely hopeless. There is still opportunity to retrieve the losses. Many states have already enacted laws making a close season on fur animals during the warmer months, and it is probable that such legislation will soon extend to all states. A frequent defect in present laws for fur protection is that the open season is too long, permitting trapping before the pelts are prime in fall, or after breeding is in progress in spring. The legislation already enacted, however, is an indication that the importance of the fur resources is at last receiving attention and appreciation.

FUR-BEARING animals in captivity are studied by the United States Department of Agriculture to determine economical methods of raising them; to ascertain conditions under which the various species can be raised profitably and produce good fur; to develop by selective breeding, gestation, whelping, and prime fur periods; and to investigate diseases and parasites of the fur bearers for the purpose of determining methods of prevention and treatment. In developing this project, the policy has always been to maintain an open-minded attitude toward all concerned. At no time has it been the intention or desire of the Government to jeopardize the fur industry.

The work is at present conducted on an experimental fur farm situated in the foothills of the Adirondack Mountains, a section of the country celebrated for the fine fur it produces. The site is three and one-half miles northeast of Saratoga Springs on an excellent State road leading from that city to Corinth. The farm is open to the general public from 10:00 a. m. to 4:00 p. m. on Wednesdays and Sundays from June 1 to December 1.

It is the plan of the Department

of Agriculture to establish an experimental fur farm in Alaska as as soon as funds are available for the purpose. The main object of an experimental fur farm is to obtain information which will be of value in helping to determine the most efficient and economical methods of maintaining the supply of fur-bearing animals.

The work of the Department of Agriculture with fur bearers, however, does not end with the study of these animals in captivity. If the fur industry is to develop along progressive lines, the source of supply should be more definitely assured. At present, there are no authentic data relating to the increase or decrease of fur-bearing animals in this country. The Department of Agriculture has been, and still is, working diligently to collect from all available sources statistics pertaining to the annual catch of fur animals in the various states, and in the collection of such figures it solicits the hearty cooperation of all agencies.

and promoting measures to effect such conservation. Valuable assistance has been rendered by other organizations in helping to bring the facts before the people. State legislatures, conservation commissions, fish and game commissions, State departments of agriculture, and State universities should become active centers of propaganda for wild life conservation, not confining themselves merely to their own particular interests, but dealing with the subject in its broadest aspects.

Lack of proper information on the part of farmers, trappers, conservationists, legislators, and the fur trade is mainly responsible for the inadequate laws pertaining to fur bearers.

It is not everywhere appreciated that fur animals are a great asset to the States, and very few persons have any idea of the annual income derived from the furs produced. It is not generally known that the pelts of fur-bearing animals are of real commercial value

F. G. Ashbrook getting acquainted with a red fox on the U. S. Exp. Fur Farm, Saratoga Springs, New York

The Biological Survey has taken a leading part in molding public opinion as to the importance of conserving our wild life resources during only a limited period of each year. The killing of fur bearers in fall and late in spring,

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¶ *From the number of replies, every state in the Union must have an outstanding cooperative. Fine, but before the judges got through, they wished they had requested a "complimentary" cigar with each manuscript. However, we tried to be as fair as possible, not even letting the thoughts of sunny California influence our chilly New York souls. Mr. Hostetler in a direct manner has pictured a cooperative of many years' standing. Age is a pretty good test of a cooperative. Close runners in the contest include Wm. W. Bathlot, C. L. McNelly, S. B. Cleland, C. M. Conner, L. W. Taylor, J. W. Firor, C. A. LeClair, and Mark Havenhill.*

THE EDITOR.

Cooperative Success

PRIZE-WINNING ARTICLE

By V. V. Hostetler

Covnia, Los Angeles County, California

THE California Fruit Growers' Exchange is one of the outstanding cooperative systems of the agricultural, if not the entire commercial world. The threatened collapse of the citrus industry necessitated its development which was successfully attained after several years of experiment and mistakes.

Citrus fruits were brought to California in 1769 by the Franciscan monks. The first commercial grove was planted by William Wolfskill of Los Angeles in 1841 and for a few years netted a return of $1000 per acre. In 1882 there were a half million bearing orange trees in the state.

Two factors were conducive to the development of the industry early in the eighties: increased transportation facilities, and the introduction by the Department of Agriculture of the navel orange from Brazil to Riverside County to which it was peculiarly adapted. The first car of oranges was shipped from California in 1877. In ten years the output increased to 2200 cars. The crop of 1889-1890 was 3476 cars.

Oranges were at this time a luxury used almost exclusively during the holidays. When the shipments passed the 2000-car mark the supply surpassed the demand. In

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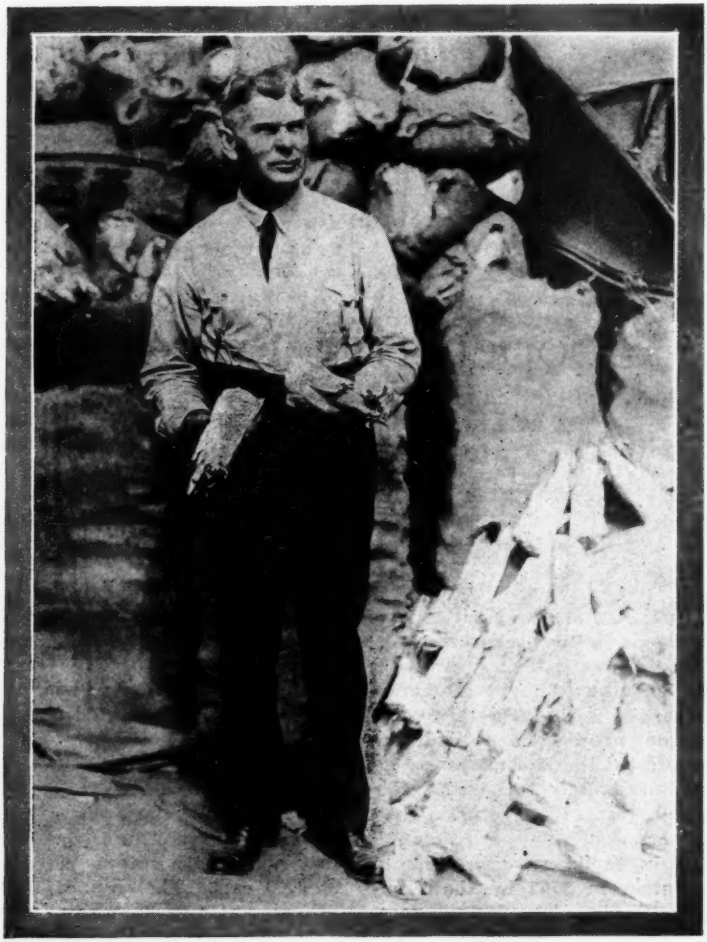
Better Crops' ART GALLERY of the month



Hail the Corn Husk King of Amer ica—W. E. Blain, Wichita, Kansas! Mr. Blain has made more money than the average successful banker by buying and selling corn husks to be used for hot tamale wrappers. The reason he doesn't make more is because he cannot get enough corn husks

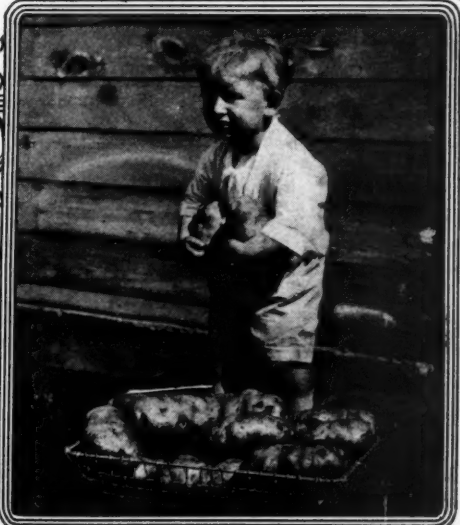
THE 1926 soils program of Stevens county, Washington, will be centered entirely on the increased production of forage crops through the use of superphosphate and potash fertilizers to supplement barnyard manure.

The benefits to be derived from such practice were clearly demonstrated during 1925 on the farm of Smith Salsbury, on peat soil—which type represents the larger part of the soils of this county.

Mr. Salsbury in company with Leonard Hegnauer, soils and crops specialist, Washington State College, is shown in the unfertilized and fertilized portions of his field.

H. J. Plumb, Stevens County Agt.

Worcester County, Maryland, produces thousands of bushels of certified seed potatoes. County Agent E. I. Oswald sealing a bag



Where two potatoes make a load. Little David Klemm holding some potatoes grown on Long Island, N. Y. Each potato weighed nearly a pound

SPEEDING Up the SPUDS?

By Cannon C. Hearne

State Extension Agent, University of Missouri

A "Show Me" farmer gets his answer.

INVESTING $14.20 and in less than a year getting a return of $156 sounds like an oil story from Oklahoma This happened, however, in Jefferson County, Missouri, and with Irish potatoes, not oil.

Mr. Barney Becker, Kimmswick, Missouri, under the direction of E. T. Itschner, County Extension Agent of the Missouri College of Agriculture, planted part of his early potato field this year with certified Irish Cobbler seed from Kennedy, Minnesota. The certified seed was treated by the corrosive sublimate method (4 ounces corrosive sublimate to each 30 gallons of water at a temperature of 60° F. in which the potatoes in sacks were immersed for 1 1/2 hours and then allowed to dry before cutting). Before planting that part of the field received an application of 350 pounds of 2-12-4 fertilizer.

The remainder of the field was planted with home-grown seed of the same variety, without seed treatment and without fertilizer.

A heavy freeze occurred on the morning of May 25. In spite of this freeze, at digging time Mr. Becker obtained 154.1 bushels per acre from the certified, treated, and fertilized plot of which 67 per cent were No. 1 grade potatoes and 33 per cent No. 2 grade. The home-grown seed which had received no treatment or fertilizer yielded 75 bushels per acre, of which 38.8 per cent were No. 1 grade and 61.1 per cent No. 2 grade.

At digging time Mr. Becker was getting $2.00 per bushel for No. 1 grade and $1.20 for the No. 2 grade. On this basis the certified, treated, and fertilized seed returned $268 worth of potatoes, while from the home-grown, non-treated, non-fertilized seed only $112 per acre could be sold.

THE use of certified seed, seed treatment, and fertilizer gave an increase in the total yield of 105 per cent and an increase in income of 139 per cent due to the higher per cent of No. 1 grade potatoes. By an additional expenditure of

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The Editor's

WATCH WASTERS

The burning question of the day is tax reduction. The Federal Government is setting its house in order, reducing its expenses and handling its finances on a businesslike, scientific plan. The result is relief for all of us in payment of Federal taxes.

But this relief is of but small benefit to us if state and local taxes are allowed to take their upward flight and state and local indebtedness be allowed to increase. While the Federal Government and Congress have been forced by a united demand from the people to stop waste and get down to business, the wasters in state and local governments have carried on an amazing orgy of needless spending, increasing our public debt and piling on the backs of this and future generations a load of taxes that has become unbearable.

The time to call a halt before we are all in the poor house is now, not later on, BUT RIGHT NOW.

What good does a decrease in the Federal debt do the taxpayer and the country at large if state and municipal indebtedness is increasing at a greater pace?

The net result to you and your children is increased taxes, the fault of which lies entirely at the door of local wasters. You have them right in your community, you who are reading these pages. And it is up to you to help put a stop to it.

This magazine is sent out to the advisers of farmers. The tax question hits every farmer in this country, not only directly but indirectly in that taxes add to the cost of every item in the budget of farm life. Why not start right out now and point out to him that these wasters of the public money should not only be watched—they should be warned, seriously warned that unless they stop adding to the public debt, they will be missing in the ranks of the country's politicians? Why not point out that all proposals calling for bond issues should be voted down by the farmer whether they are for good or wasteful purposes? That if they are needed they should be paid for as we go along?

The farmer has been compelled to practise economy to a degree that has forced him at times to postpone the purchase of

many urgently needed articles. He has patched up the old Ford and forgotten the high-priced car he would like.

But his tax money has undergone no such pinching. It has been spent in the last few years of hard times on the farm with a free and easy hand by those who pose as his best friend just before election.

Why not tell the gentlemen to "patch up the Ford"? Or better still, send those who have been especially free with his money into oblivion. Hang a sign on them so all may read, "He wasted our money." Note how anxious Congress is to reduce taxes. The sign was hung on some of them last year. Try it on some of the gentlemen at home. It will save you some taxes.

J. K. Hoover

THANKSGIVING More than 300 years ago a little band of American farmers—on the rocky coast of New England, in the face of all sorts of hardships—saw fit to set aside a day of praise for the mercies of the year past.

They set us a good example. They made the most of everything. They had the power and ability to see Life as a magnificent whole.

Too many of us now see only the "spare parts." Too often we adopt the attitude of digging—as though we had to work hard to find something for which to be thankful.

This is hardly fair to ourselves. For the day let's be thankful without reservations for all things. It will do us good—like going out and taking a deep breath of fresh air. The sickest man will be better for a deep breath of thankfulness.

N. F. A. *Gets Professor WARNER*

ACCORDING to an announcement recently made by the Soil Improvement Committee of the National Fertilizer Association, Professor H. W. Warner, of Ames, Iowa, has been appointed Agricultural Editor of the Northwestern Division of that organization.

Professor Warner has been Extension Professor of Soils at Iowa State College and for the past six years has had charge of the soil-improvement campaign that has been put on throughout that State. Although still a young man, he has had considerable experience in agricultural affairs.

Born and raised on a farm in South Dakota, he entered South Dakota State College in 1912 and graduated in 1916. That same year he entered Iowa State College as a post-graduate student in Agronomy and received his Master's degree in 1917. During the next two years he did some work with the Iowa Soil Survey and spent about fifteen months in the Balloon Division of the U. S. Army Air Service.

Professor Warner has popularized soil-improvement work in Iowa; he has conducted alfalfa tours in many counties; he wrote and directed the production of a two-reel educational film, entitled "Pay Dirt," and has written bulletins on a number of soil-improvement subjects. In addition to his regular work, he has served as a special writer for a large number of farm and daily papers.

Professor Warner arrived in Washington about October 15th and will spend a large part of his time in editorial and publicity work.

* * *

They Said IT with a Coal House

E. A. WILLIAMS, state agent for extension work among the negroes in Georgia, makes report of a successful short course recently held at Washington Institute, Savannah.

Demonstrations were given in step cutting, rafter measurements and cutting, building stove flues, laying off an orchard, pruning, judging livestock, making a seed corn tester, selecting seed corn and making self-feeders for hogs and poultry. The boys were given lessons in fertilizers and legumes that go to build the soil.

The students left a completed coal house to show their appreciation for the use of the grounds and buildings. The students built the house themselves.

FERTILIZER NOTES

OCTOBER was a reactionary month for many of the materials entering into the manufacture of fertilizer, and the close of the period saw a general easing off of values in ammoniates and phosphates. Because of the uncertainty regarding the market outlook on these materials, the manufacturers were not active buyers. Contrasted with this was the firm undertone prevailing in potashes, prices of which are guaranteed, thus enabling the manufacturers to figure their costs ahead with certainty. The average price for five selected grades of potashes remained unaltered at $1.31 per 100 pounds. The average for the ammoniates was off 5 cents at $2.61 per 100 pounds, while the average for phosphates showed a decline from 66.75 cents in September to 63.85 cents per 100 pounds in October.

The decline in the ammoniates was due primarily to reductions in prices for tankage, fish scrap, and blood, while the reaction in phosphates was the result of a break in prices for bone materials. Trading in the markets had slowed down considerably during the month, manufacturers holding off the market until conditions become more stabilized.

Labor disturbances at Mejillones, Antofagasta, and Caleta Coloso tended to hold back shipments of nitrate of soda, and advancing ocean freight rates contributed to the stronger market for this ammoniate. Continued scarcity of domestic ammonia sulphate was also a feature of the market.

Considerable discussion was heard in market circles several months ago regarding the necessity of lower prices for Chilean nitrate of soda, to permit of further increase in consumption of that material. Some talk was heard regarding a probable reduction next year, but at present prices are on the upgrade. A new company will enter into active production in Chile next June, this company being organized by American copper interests. The new entry in the field a few weeks ago sold on the American market $15,000,000 in bonds to finance its operations. The company in question is reputed to have a new process for nitrate extraction which will cut the production cost 50 percent, and this process, presumably, will be made available to the other producers in Chile, with resultant lowering of costs and selling prices.

In the meantime, development of synthetic nitrogen compounds in Europe is reported to be cutting into the Chilean nitrate market to some extent. According to a report from Paris, the French Government is making satisfactory progress in the construction of its plant at Toulouse, where synthetic ammonia sulphate and other compounds are to be made, under the management of the Powder De-

partment. It is expected that the plant will be placed in operation in June, 1926. Capacity of 500 tons of nitrates per day will be attained when all of the plant is ready for operation. This is about half the production of synthetic nitrogen in Germany, and compares with output of 100,000 tons annually in the United States and about 80,000 tons per year in England. In addition to its increasing production of synthetic nitrogen products, France is getting large quantities of reparation nitrogen from Germany, all of which directly affects the Chilean nitrate situation, and makes necessary further development of other consuming markets if the steadily increasing output of the Chilean product is to be absorbed.

With the fertilizer industry working back upon a sounder footing, there has been quite a little quickening of competition in the manufacturing end of the mixed fertilizer business. The old established companies are facing more competition by some of the smaller operators who closed down their plants during the period of depression, while a few new companies are reported entering the field. This general anticipation of better times in the industry is reflected by the resumption of acid phosphate manufacture by many of the smaller factors in the South, who had been purchasing their requirements from the larger manufacturers during the dull period following the 1920-21 market debacle, during which time the product was being sold a great part of the time at cost or under.

PRICE TREND IN FERTILIZER MATERIALS

THE FOLLOWING PRICES ARE THE AVERAGE PRICES PER 100 POUNDS FOR FIVE SELECTED* POTASHES, AMMONIATES, AND PHOSPHATES. THE COMPARISONS ARE MADE AGAINST JANUARY 1, 1914, AS REPRESENTING PRE-WAR MARKET VALUES:

Material	Current	Month ago	Six months ago	Year ago	Pre-war Jan. 1, 1914
Potashes.....	$1.31	$1.31	$1.29	$1.23	$1.35
Ammoniates..	2.61	2.66	2.55	2.51	2.14
Phosphates...	.6385	.6675	.5780	.5715	.57

* The five selections under each heading are:

POTASHES	AMMONIATES	PHOSPHATES
Kainit, bulk	Sulphate of ammonia	Acid phosphate, 16 per cent
Manure salts, bulk	Blood, dried, New York	Bones, rough, hard, Chicago
Muriate, bulk	Fish scrap, dried, works	Bones, ground steamed, Chicago
Sulphate, bulk	Soda nitrate, spot	Rock, Florida, 68 p.c. works
Magnesia, bags	Tankage ground, New York	Rock, Tennessee, 75 p.c. works

Foreign and International Agriculture.

The purpose of this department is to help us understand the scientific, practical, and industrial agriculture of other countries and the international developments which result. The editor believes that such knowledge is now of the greatest importance in our agricultural prosperity. Every care is taken to insure accuracy—both of facts and their interpretation.

This month we are devoting most of this section to points of interest for travelers in Holland and Germany. We will be pleased to receive, at any time, unusual observations on agriculture made by any of our readers on their visits to foreign countries.

HOLLAND — Windmills in Holland will soon be a thing of the past. It has been decreed that in the march of modern efficiency, windmills must go. Power pumps pump water cheaper, and they pump it quicker. Windmills may add to the scenery, but they also add to the cost of crop production and under modern methods they cannot be used any longer.

A large part of Holland, as everyone knows, is below the level of the sea. These areas have been drained. They are divided into "Polders." A polder is an area of land on the same water level surrounded by a canal. (The whole area of drained land is known in Dutch as "Veenkolonien," which means the whole area drained from the sea).

To get the water out of the lower Polder, it is pumped up into the canal surrounding the polder next above it, from there to the next, until the water flows into the river and out to the sea. In this process of pumping the water from the polders, the windmills have been built often in pairs along the canals that line the roadsides. Windmills are also used for grinding grain.

Friends tell us that 10 years will be all that will be necessary to effect this replacement. In the interest of a picturesque countryside, it may take longer.

Three or four other things impressed us about Dutch agriculture: First, a soil survey under water; second, haying by boat; third, the Dutch auction; fourth, the efficiency in crop production, and in everything first, last and all the time, cleanliness.

Holland has not enough land, or to put it the other way about, Holland has too many people. They are an agricultural people, very few are rich in the modern sense of the term. Only a few Dutch East India merchants are reputed to be in this enviable position. The great majority of the people depend directly or indirectly on the land, and, therefore, it is vitally in their interest to have more land.

The Zuyder Zee takes up a lot of space for little purpose apparently. Why not drain it, have more productive polders, a whole province of new polders? The Dutch people are ambitious in this respect, plans have been prepared, and a survey conducted to determine what is the type of soil at the bottom of the Zuyder Zee.

This brings to the front another somewhat unique land problem. The question is what can be done

for the people who make their living from the waters of the Zuyder Zee. Will they take kindly to cows and pastures?

The quaint old town of Hoorn and others on the Zuyder Zee will become real inland towns, their glory as East Indian trading ports departed for all time.

WE were surprised to notice in some of the fields what looked like a stack of hay moving across the field. In reality, though, it was a load of hay on a boat gliding along the narrow canal through the field. Many such fields can only be reached by boat. Implements are carried to work in this manner and the produce carried away in the same way.

This brings us to the Dutch Auctions. When a farmer wants to sell his produce, say, for instance a load of cabbages, he loads them on his boat and floats along right into the auction room. The canal itself passes through the building where the auction is held. The auction itself is a very clever idea. There is no talking. In many such places it is done by the help of electricity. The central interest is a large pointer that is so constructed that it points in succession to a range of prices. Each prospective buyer sits in his seat opposite the pointer and can stop it by pushing a button. The load of cabbages appears on the barge at the foot of the tier of seats.

The pointer is placed at a price far above what anyone would pay. It then moves slowly over an arc to a lower price. When it touches a price that any buyer will offer, he merely pushes the button and stops it at that point. The clerk then records the sale in his name, the load of cabbages glides out and the sale is over. It is all done very quickly, very quietly, and efficiently. The auction clerk knows the credit of every buyer and takes good care, apparently, that no one exceeds the limit.

We were told that this peculiar method of bidding originated during Spanish occupancy of Holland. The Spanish placed a tax on sales where buyers bid against each other. The thrifty Dutch, in order to get away from the tax, just reversed the system.

We need hardly add that in a barge load of cabbages, they look exactly alike. They are very carefully graded and show in a practical way the results of intensive and systematic crop production. Neither space nor time is wasted. It is all organized to produce at the greatest profit.

The foregoing applies, of course, to the polder region on the west coast of Holland. East of Utrecht there are large areas of undulating sandy land, where no canals are necessary. The problem here is to build up these light soils to productive capacity. The scientific work pertaining to soils is done at the Experiment Station at Groningen.

GERMANY — Justus Liebig was an eminent scientist. He was a hard worker and believed in others working hard. In his laboratory, still remaining in Giessen as he used it, is Liebig's private office surrounded by laboratories.

Liebig arrived in Giessen in 1824. One of his first orders was to cut a window in each wall of his office so that he could see his assistants working. An excellent example, though one hundred years old. Then as now apparently, scientific discoveries came, not by dreaming, but by continued and systematic hard work on the part of somebody. This attitude Liebig stimulated to the highest degree.

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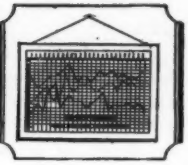
AGRICULTURAL DEVELOPMENTS



By P. M. Farmer

Studies Cuba's Soils

The readiness of the United States Department of Agriculture to assist neighboring countries with their agricultural problems was well shown during the past year when men from the Bureau of Soils cooperated with the authorities in Cuba in making a preliminary survey of the soils of the Island. In the past the soils there have been known very little and have been very roughly classified as red, mulatto, black, savana, and coco. The soil men found nearly 50 distinct types which have now been defined. They found at least 4 classes of red soils, some of them peculiarly adapted to sugar cane, the most important crop on the Island, and some of them not adapted to the crop at all.

One of the first results of the study, which was made at the suggestion of the Tropical Plant Research Foundation, has been the inauguration of fertilizer experiments on soils most suitable for sugar cane growing.

The Meat and Cheese Skipper

The cheese skipper, the larva or maggot of a very small active fly, has been doing a great deal of injury to smoked meats. The last few years some new facts have been brought out regarding this destructive pest.

Dr. Perez Simmons, in the Bureau of Entomology, found that wire cloth of 20 meshes per inch, formerly thought to be fine enough to exclude the flies, is not effective. He has found that it is necessary to have 30 meshes per inch to keep them out. Other recommendations, in addition to proper screening of rooms in which cured meats are stored, are that allowing smoked meats to cool in unscreened houses should be abandoned; newly smoked meats are most attractive to flies and they are almost certain to infest meat in warm weather if it is left unprotected. Although wrapping of smoked meats is a good protection, this does not do away with the necessity for screen protection before the wrapping is done.

In addition to ham, bacon and cheese, the skipper attacks dried beef, salt pork, fish, carrion, and bones. Bones are a breeding place for the flies and care should be taken that such breeding places do not exist near stores of cured meats. Prevention has been found to be better than cure. Insecticides that are effective for many other insects fail utterly with this insect which is very resistant in its larval stage. It resists heat in such a way as to remind us of the fabled salamander. Four hours heating at 122 to 124° F. did not destroy the activity of full grown larvae. When the temperature was dropped to 5° F. for more than 60 hours it did not prevent their ultimate development. They can resist starvation for months even in hot weather. To free infested rooms after the meat has been removed it is necessary to

fumigate with hydrocyanic acid gas.

This insect has been known longer than most economic pests, the first reference in literature occurring in 1567. It is ceasing to be much of a factor as a cheese pest but is now the worst pest of cured meat.

Improved Phosphoric Acid Method

The furnace method of recovering phosphoric acid from phosphate rock, developed by the Bureau of Soils, has recently been improved by the discovery that almost complete recovery can be made by using a lower temperature than was thought necessary before. The high heat used in this process to vaporize the phosphoric acid caused certain mechanical difficulties in the plant which, the investigators say, will now be minimized.

Lime Pays on Spinach

In garden fertility experiments at the New Hampshire Station it was found that lime produced exceptionally good results on spinach but was not much needed on squash plots. Spinach on land that had been limed yielded 72 per cent more than on unlimed land. The good effect of lime was more apparent where no manure was used. When squashes were grown in these tests lime brought only a 4 per cent increase.

First Licensed Warehouse for Dried Fruit

The Federal warehouse act continues to draw customers and to hold a large number of satisfied ones in various fields. Recently the first license covering the storage of dried fruit under this act was issued to a firm at Tres Pinos, California. This warehouse has a capacity of 1,000 tons and provides storage for dried prunes.

World Census Work Goes On

Leon M. Estabrook, formerly of the Department of Agriculture and now Director of the World Census project, recently wrote to one of his former associates concerning his work which is being carried on in connection with the International Institute of Agriculture in Rome. After mentioning many things dear to the heart of the statistician he lightens the weight of his communication with the following: "Last week I read an outline of a proposed census survey drawn up by the Indian Economic Enquiry Committee, and was struck by the juxtaposition of two items, 'elephants' on one line and 'bees' on the next, with absolutely nothing to indicate the kind of information to be obtained regarding these two important classes of animals, such as numbers, sex, age, or value."

* * *

ASSURANCE DOUBLY SURE

"Glad to see you getting in on time these mornings, Mr. Slowe," said the manager.

"Yes, sir, I've got a parrot now."

"A parrot. What for? I advised you to get an alarm clock."

"I did sir, but after a few mornings I got used to it, and it failed to wake me. So I got a parrot and now when I retire I hang the alarm clock over his cage. It wakes the parrot, and what the bird says would arouse anybody."—Boston Transcript.

* * *

Boss—"Well, did you read the letter I sent you?"

Office Boy—"Yes, sir; I read it inside and outside. On the inside it said, 'You are fired,' and on the outside it said, 'Return in five days,' so here I am."—Pennsylvania Farmer.

REVIEWS

Increasing Potato Yields, University of Missouri, Circular No. 163

Extension Circular No. 163, University of Missouri, written by E. M. Page, presents in an attractive form some essentials of successful potato growing in Missouri.

In 32 field demonstrations in 12 counties in 1924, an average increase in yield of 62.9 bushels per acre for certified seed over common seed was shown. In 1923 the average increase in yield was 84.8 bushels per acre.

The importance of seed treatment for control of rhizoctonia blackleg and scab is stressed. Ten potato seed treatment demonstrations in 3 counties show increases of from 7.2 to 40 bushels per acre for hot formaldehyde and from 24 to 35 bushels per acre increases for corrosive sublimate treatments.

Applied at the average rate of 381 pounds per acre on 35 demonstration fields in 9 counties, commercial fertilizer gave an average increase of 47.2 bushels per acre. Recommendations for use of commercial fertilizer for early potatoes in Missouri call for about 500 lbs. per acre. For soils of medium fertility use 3-12-4 formula: On better soils 2-12-2 and for soils low in potash use a 2-12-6. On very fertile soils, acid phosphate alone should be used.

For the Missouri farmer interested in bigger yields and greater profits from potato growing, we feel this bulletin ably points the way. It presents abundant evidence of the importance of field demonstrations and should be a valuable guide.

A Study of the Secondary Effects of Hill Fertilization, Iowa State College, Research Bulletin 87

An interesting discussion of the secondary effect of hill fertilization is given in Research Bulletin 87 by Horace J. Harper of the Iowa Experiment Station.

A vast amount of literature is reviewed and deductions are ably drawn and presented. Field, laboratory, and greenhouse study supplementing the research made by numerous investigators make this bulletin a valuable contribution to the student or teacher of soils and fertilizers.

Of particular interest is the opinion expressed and concurred in by several investigators, that there is need for considerable experimenting by manufacturers of fertilizer machinery. Poor results from fertilizer applications are too frequently traced to poor distribution of fertilizers in the soil.

To fertilizer distributor manufacturers, and chemists and teachers and to students of soils, we recommend this bulletin for careful study and as a valuable reference.

Profits from Phosphates, University of Wisconsin, Bulletin 376

The study of phosphates in the fertilization of farm crops is important in any careful analysis of the crop needs. Whitson and Richards in their discussion of

Profits from Phosphates, Bulletin 376, Wisconsin Experiment Station, ably present results of extensive experiments with the use of phosphates on Wisconsin soils.

Experimental data reveals that more than half of the soils of Wisconsin would be benefited by an application of phosphate fertilizer. The present need for liberal phosphate applications is undoubtedly due to years of continual cropping to wheat.

Trials with 16 per cent acid phosphate applied at a rate of 400 lbs. per acre resulted in average acre increases of 8.5 bushels for oats, 4.2 bushels for barley, 838 lbs. for alfalfa and 941 lbs. for clover. It is estimated that the value of the increases above noted and the phosphorus returned in the crop residue and manure returned to the soil in each case, is about 4 times the cost of the phosphate used.

The authors stress the phosphate need of different types of soils and urge farmers to resort to field trial plats on their own farms, as the quickest and most satisfactory way of learning the phosphate requirement of their soil. Much interesting and valuable information on potash, lime and manure is to be found in this bulletin. Important also is their discussion of the phosphate needs of special crops.

Every Wisconsin farmer interested in the conservation of the fertility of his soil should read this bulletin. His success in a large measure at least depends upon the principles of fertilizing Wisconsin soils so clearly presented by the authors.

The Illinois System of Permanent Soil Fertility, University of Illinois, Circular 298

Among the most valuable scientific contributions to the agriculture of the north central states was the development of "The Illinois System of Permanent Soil Fertility."

The conception of this work by the late Cyril G. Hopkins of Illinois in 1910 was the real beginning of serious soil study in this country. His great contributions were the gathering together, studying, interpreting, classifying, and unifying all the known facts regarding soil fertility.

Louie H. Smith, chief in charge of publication of the soil survey in Illinois, fittingly sums up in a recent circular the effect of the Illinois System on the permanency of agriculture in that state.

One of the most significant developments after 25 years of intensive experimental study of Illinois fertility problems on more than 50 experiment fields under a wide variety of soil types, farming systems, and economic conditions, is that soils are unlike in their response to fertilizer treatment.

Some interesting things revealed by the study of the Illinois System are:

1. Some soils show special response to application of organic matter.

2. On some soils limestone is the foremost requirement.

3. Phosphorus hunger strikingly illustrated on some soils.

4. Benefit from potassium salts limited to a few acres. The greatest increase from use of potassium was in that part of the state south of Odin, demonstrated conclusively on the experiment fields at Odin, Ewing and Union Grove. The type of soil prevailing there was principally gray silt loam. The muck soils in every case responded profitably to liberal potash applications.

Every farmer interested in the fertilizer problems of his own soil would do well to send for Circular 298, University of Illinois, Urbana, Illinois.

Kernels From Cobb

(*From page 7*)

as stimulants of deep interest in his work. One week when he was pressed for time to produce his regular story he substituted a collection of short paragraphs about things he had observed about the county, including references to persons and places. There was an immediate flare of interest and a demand that he keep the paragraph pot boiling. Since then Cobb has been a paragrapher of no mean success. The editor of the Wicomico News gave him a regular double column now known as Cobb's Column, which often runs over into some other writer's space.

Since the Column became a looked-for feature, getting movements going for local agriculture and for many other activities has been much easier than before. If something worthwhile moves like cold molasses, a little friction from Cobb's Column warms it up. He praises the enthusiasts and "bawls" out the lukewarm members of the community, but the results show he knows how to do it. Recently he advertised through a paragraph a quantity of seed available for trial in the county, but got only two or three requests. Another paragraph on the "uselessness of sowing seed on stony ground," which he intimated he was doing, brought 19 telephone calls for the seed the day after the paper was issued.

IN addition to improving the spirit of the community and its agriculture, Cobb has been a real factor in advertising it, for there are a few readers of this county-seat paper in various parts of the country. As a result letters have been received from a number of states asking about conditions on the Eastern Shore or for more details regarding some practice mentioned in a paragraph.

The upper right hand corner of the Column carries a symbol of welcome to everybody, a picture of the open door to the county agent's office in the court house. Below it is this paragraph:

"Your county agent is on hand to work with you. He is in touch with all of the work of the State experiment stations and he also knows what the other farmers in your county are doing."

A few paragraphs will show the flavor of the product of Cobb's observations and musings. They are taken from the Column written shortly after his return from a trip to southern New Jersey, those grown in Wicomico County.

"The first welcome sign we saw on entering New Jersey was 'Gas 19 cts.' and on the whole trip we never paid more than 21 cents for that necessity."

"We found the County Agent in Cape May county, W. Collins Thomas, doing the same efficient work he did while in our own State of Maryland. It was due to his efforts and cooperation that we were able to visit many farms and get pointers on the agriculture of the section."

"Another impression that one gets in Jersey is that roadside markets are a paying proposition if numbers are any criterion. In some cases we felt that these markets were used as an excuse for the man on the place to loaf

(*Turn to page 37*)

New Peaches From Old Trees

(*From Page* 13)

NUMEROUS illustrations could be given of similar experiences. A conservative estimate shows that around $10,000 worth of fruits have been sold in Athens during the past season from trees which a few years ago were considered worthless or nearly so. Besides this several hundred farm families have had an abundance of peaches, plums and grapes. Plans are being made on every side to plant out new home orchards this fall.

My purpose in writing this story is not limited to telling of how a hundred or more farmers in this section have put new peaches on old trees; but I want to go a step farther and give my experiences in getting the practices that were used across to the farmers.

When I started work in Clarke County, Georgia, in 1923, as county agricultural agent, I found farmers generally convinced that it was not possible to raise peaches like "they used to just grow when I was a boy." Also I knew from years of work with fruits that the limiting factors to peach production in this section were, the San Jose scale, borers that infest the crowns of the trees, the curculio which causes wormy fruit, brown rot and scab. I knew that they could be controlled successfully.

But, and here was the difficulty, it was not easy to get farmers generally to undertake the practices necessary to eliminate these troubles. I just had to get a toehold somewhere and show them.

SO, in the spring of 1923, I found a small vegetable grower who had 133 peach trees from which he wanted to supplement his income. He had been talking with

G. C. Carney & Son demonstrate that Old Trees Pay

the extension horticulturist from the State College of Agriculture and was already convinced that sound fruit could be grown. He agreed to let me use his orchard as a demonstration center—a place where the things we had been talking about could be put into actual practice and shown to the other farmers who would be interested.

This man was O. T. Adams who from these 133 trees sold $325.00 worth of peaches in 1923, $719.00 in 1924 and will sell about $400.00 worth this year when the final figures are gotten.

IN the fall of 1923, I started five additional demonstrations well placed over the county so as to put practically every farmer in the county close to an actual demonstration.

As a follow up to this I sent articles to the local papers telling what practices were being used at these demonstration centers. From time to time as result-data were gathered these likewise were published.

By the fall of 1924 I had sufficient facts to make a county-wide drive. A circular letter carefully prepared, short and to the point, was sent to practically every farmer in the county. It was also published in the Athens Banner-Herald, the local daily. This in turn was followed up by short articles, by personal visits and by field meetings at the demonstration centers. Within four weeks from the time the circular letter was mailed, I received approximately 200 calls for information about practices needed to be applied in producing good fruit.

From these experiences I feel certain that the best plan that can be used in getting across to farmers and others any sound, common sense, system of production—any scheme of modern practices, is to first get the plan formulated, then demonstrate it on farms under local farming conditions, and after this be sure to follow it up vigorously and persistently, using every facility available to get the actual results obtained before as many people as possible. In this way—"New Peaches Can Be Gotten From Old Trees."

* * *

Kernels From Cobb

(*From page* 35)

around in the shade as there was practically no produce displayed and the whole effect was one of just killing time. But in the main these stands were attractive with a large amount of produce on display and alert salesmen waiting on trade. We made a somewhat extended study of this particular part of the farming game as it is one that our farmers have neglected."

Who isn't interested in cheaper gas, even if it is in some other State? Then there is a reference to an old friend who has moved to pastures new. There is a bit of shrewd observation in the third paragraph and an urge to farmers to look into roadside marketing. He continues with some home news and suggestions:

"J. Raymond Parker has a mighty fine pair of twin calves on his place and he may be induced to carry them to the Fair, although he is not certain at this time. Ray has always had very good cows on his place that have been heavy producers of rich milk and now he is too modest to show the other fellow the kind of cows and calves that should be kept on every farm. But perhaps we can induce Mrs. Parker to work on

Raymond and as a result have these twins at the Fair this year."

Pages of argument certainly would not budge Raymond so effectively as this well-oiled jackscrew.

"Mrs. David Mansell brought several melons into town this past week that weighed over nine pounds each. The important part to remember is not the size of the 'lopes' but the fact that clover and fertilizer were the factors that made it possible to produce such specimens on land that would grow nothing but weeds two years ago. And clover is given the credit largely as fertilizer was used before. A mighty good combination is clover or some other legume plus fertilizer plus thorough preparation of the soil plus constant attention and hard work."

And then there is a simple and sincere obituary:

"It seems the Grim Reaper is taking many of our good friends lately, and we are missing them already. John Dulany was perhaps one of the best friends and cooperators that we have ever had since coming to Wicomico County. Always willing to do anything that would help us in our efforts to put something across for the other fellow and always ready to do more than his share, was one of Mr. Dulany's strong points. We are fortunate, however, in having in his son Ralph another who never hesitates or objects to doing things for us that will help the work."

They say in Wicomico County that the county agent's work is now built around Cobb's Column. Every farmer and many folks in town feel they are connected to the community through it.

Solving Corn Nutrition Problems

(*From page 6*)

correlate such deficiencies to certain soil types, or farming systems.

For these reasons, field surveys were commenced on September 1st.

In one part of the field survey, a study is being made along a line directly east and west—a base line—through southern Illinois, Missouri to central Kansas, then north through Kansas and east again through Nebraska into Iowa and northern Illinois.

Another part of the survey is being made from southern Indiana—east into Ohio, north through central Ohio, thence returning through northeastern Indiana.

In all tnis work the relation of the nitrate content of the corn stalks is also being determined and correlated.

THE survey carefully records all factors having any influence on the production of the crop, the soil, fertilizers, farming system, the condition of the crop—whether diseased—if so what diseases. Samples of the corn are sent to the laboratory at Purdue University Agricultural Experiment Station and are studied there for various malnutrition symptoms. Such tests are very detailed and systematic in character. Careful records are kept of the field from which each sample has been obtained.

This is in line with one of the important phases of the work—i. e., the correlation of field and laboratory and of the soils and plant physiological viewpoints.

We feel that work of this kind will help towards the solution of the nutritional problems of our corn field.

Speeding Up the Spuds

(*From page 23*)

LEFT—No fertilizer. RIGHT—350 lbs. per acre 2-12-2 Fertilizer

approximately $6.40 for certified seed, $7.00 for fertilizer and 80 cents for seed treatment, or a total of $14.20 per acre, Mr. Becker received $156 profit. Ordinarily the cost of producing an acre of potatoes in this section of Missouri is $50. In Mr. Becker's case, where the yield was 75 bushels per acre, potatoes were produced at a cost of 66 cents per bushel. When he increased his cost per acre to $64.20 by using the improved methods he reduced his cost per bushel to 41.6 cents through his increased yield of 154.1 bushels.

Mr. Becker's demonstration was only one of several such conducted by County Agent Itschner. Mr. Joseph Ziegler used certified, treated seed in all his field. Half of the field received 2-12-2 fertilizer at the rate of 350 pounds per acre and the remainder of the patch had no fertilizer. The fertilized part yielded 134.7 bushels per acre while the unfertilized area produced 105.8 bushels per acre, an increase of about 29 bushels or 27 per cent. At the prevailing price for potatoes, this increase in bushels meant about $50. After subtracting the cost of fertilizer ($7.00 per acre), Mr. Ziegler had a net profit of $43.

Both of these men live in the potato producing section in Northeast Jefferson county. Seventy-five growers in this community treated 1282 bushels of potato seed at a community seed treating plant which was operated on June 10 and 11 at Imperial by a committee appointed from among the growers. All who had signified their desire to treat seed were given a day-hour schedule to avoid confusion which might arise from all coming at the same time. It was possible to treat at the rate of 150 bushels per hour at a cost of 5 cents per bushel.

A wooden tank with a false bottom was used with the temperature being furnished by steam from a road engine. The potatoes were immersed in sacks and allowed to dry in the wagons or trucks on the way back home.

Cooperative Success

(*From page* 19)

these early years of the industry the crop was bought outright by dealers who shipped wholesale to large marketing centers. When demand slackened the marketing was done almost entirely through commission firms.

This system had two fundamental weaknesses: no single buyer or shipper was able to maintain efficient market connections nor have knowledge of shipments by all competitors to all markets, and second: there was no systematic attempt to create a market in small cities. An immense market awaited intelligent development and control. It required the organized effort of the growers, the men who must sell the entire crop at a profit and who paid the price of imperfect distribution, to effect this market improvement.

Profiting by the failures of several cooperative organizations 60 growers met at the Los Angeles Chamber of Commerce April 4th, 1893, and appointed a committee which planned the Exchange system.

APPROXIMATELY 200 associations, individual growers, and packing companies now compose the Exchange. These associations are controlled exclusively by the grower members and are operated on a non-profit basis. The fruit is in most instances picked, and packed by association crews under the supervision of the manager. Many associations also fumigate and spray for their growers and during recent years storage for orchard heating fuel is being provided. These services are done for members at cost.

The season's shipments are divided into periods called "pools" which may extend for one or more months or for the season. Returns to members are made on a basis of the average price received for all fruit of that variety and grade during the duration of the pool.

Individual associations frequently hold property of $300,000 value and do an annual business exceeding $100,000,000.

Each association is a part of a district exchange of which there are now 22. The district exchange is the sales agent of its association members. Its manager apportions all orders for fruit and is in constant touch with the sales and traffic departments of the central exchange and acting upon this knowledge of market conditions, he sells to the best advantage for his district. The central sales department dealing with these 22 district managers can distribute market information more rapidly than to 200 local units. The district manager is in a position through the associations to speedily increase or lessen shipments.

THE California Fruit Growers' Exchange is a non-stock corporation of which the 22 representatives of the district exchanges are members. The directors of the Exchange meet weekly and the sessions are open to all association managers, growers, and to those interested in the citrus industry. The keynote of the Exchange sale's policy is equable distribution.

Previous to the beginning of each season the general manager and the sales manager visit each division office in markets in various parts of the United States for conferences. During the season

the sales manager obtains weekly from each district exchange manager an estimate of shipments of fruit of the next week and with this information can approximate market conditions at any given point.

Coordinating with the sales department is the traffic department which gives advice regarding car supply, freight rates and adjusts claims for damage.

Advertising was first begun by the Exchange in 1907 when $6000 was appropriated for a newspaper campaign in Iowa. The annual advertising appropriation now exceeds $800,000.

The Fruit Growers' Supply Company, which is a separate organization owned by the Exchange assures to the members every orchard and packing supply at minimum cost and without delay.

Through this vast cooperating machine which the Exchange has perfected, during 1923-1924 it shipped 44,266 cars of fruit valued at $50,515,497, which was 72.9 per cent of the entire citrus crop of California.

Foreign and International Agriculture

(*From page* 30)

He was trained first as a pharmacist, but afterwards turned to chemistry, and at 21 years of age he went to Giessen as a full professor. The building in which he worked hardly looks like a laboratory in our modern sense. It was formerly part of a barracks, and its exterior still impresses visitors as such. However, it was adequately fitted up. Additions were made in 1835, and we all know the good work that was done there.

The laboratory now remains as Liebig and his co-workers used it for many years. Places where lime was burned, acid distilled and the class room where Liebig lectured and where students cut their names on the desks, are still shown the visitor.

Silent and empty now, but impressive as the place wherein much was done to advance the fundamental research on which many of

Liebigs Laboratorium im Jahre 1841

our modern agricultural practices are based. Visitors are welcome. There is a society in memory of Professor Justus Liebig in Germany, the officers of which are always glad and ready to show visitors the laboratory and equipment used by this eminent scientist.

——o——

The German Potash Chemists held their principal meeting in Wernigerode June 5th to 7th last. Addresses were given by Dr. Quincke, Hannover—"Neuere Untersuchungen ueber das Verhaeltnis der Luftkohlensaeure zur Duengung" (Recent Investigations on the Relation of Air Carbonic Acid to Fertilization)—Dr. W. Mayer, Berlin, and Mr. Haehnel. Dr. Mayer lectured on "Die landwirtschaftliche Anwendung der Kalisalze" (The Use of Potash Salts in Agriculture). This paper and a review of Dr. Quincke's paper will be published in one of the early issues of BETTER CROPS.

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Gray Goes to PICA

(*From page* 15)

Upon returning from the Army in December, 1918, Gray was reassigned his old position and given the responsibility of supervising cereal grass gardens in 12 states.

Mr. Gray was appointed Head of the Department of Soils, New York State Institute of Applied Agriculture, Farmingdale, Long Island, in June, 1921. In October, 1921, he was placed in charge of the extension work on Long Island under the auspices of the Institute, which position he held until he went with the Potash Importing Corporation October 1, of this year.

Conserving Furs For Madam

(*From page* 18)

when the breeding season has started, is a wasteful practice.

Approximately 45 to 55 percent of the pelts coming to the raw fur markets fall into the unprofitable class. Fur of superior quality and more of it would come to these markets if the seasons were shortened and made more uniform in States having similar climatic conditions.

TAKE, for example, the muskrat, which is the most valuable fur producer in the United States. Its increasing value for fur and meat makes it most desirable to preserve and perpetuate it as a natural resource. As a staple in the American fur market, the muskrat is considered the most important fur animal. Some dealers consider it the barometer of the fur industry. "As goes the muskrat, so goes the market". Although injurious in some localities, the muskrat is for the most part an inhabitant of places unsuited to agriculture. Muskrats multiply much more rapidly than other fur bearers, and because of their aquatic retreats and general habits, they are better fitted than most animals of this class to maintain their numbers under the little protection now afforded them.

In certain sections of our country where the open season is from four to six months, the muskrat is becoming very scarce. It is still unprotected in 12 States, and in 15 States has to face an open season of from four to six months. The persons responsible for the enactment of the laws do not always realize that two and one-half months are a sufficient open season on muskrats, nor that the most

Beaver houses are no longer a common sight

valuable skins are those taken late in winter and early in spring.

Next in importance to the muskrat as a source of fur is the skunk, an animal which brings to the trappers of the United States millions of dollars annually. Thirty-five States now have laws protecting skunks, with open seasons of one and one-half to six months. These laws were passed quite largely in response to the wishes of farmers, who recognize the usefulness of these animals in destroying noxious insects, and to the demands of persons interested in conserving the fur resources of the country. There are still 13 States that give no protection whatever to skunks, and one with only a few local county laws to protect it. In view of their usefulness and fur value, skunks should be protected everywhere by a close season of at least nine months, but the right of farmers to destroy predatory skunks should always be reserved.

Every State should require that trappers be licensed and, in addition, every trapper should be bound by oath to turn into the game warden, a report of his catch for the season.

Areas in which fur bearers have become depleted should be closed completely for a period of years and, so far as practicable, these regions should be restocked. The national forests furnish excellent breeding grounds where fur bearers can live and increase unmolested, and stock from these forests could well supply depleted areas.

FUR farming is attracting wide attention, chiefly because of the increasing demand for furs and the possibility which it holds out of supplementing the supply obtained from our fine fur animals in the wild. The enormous profits derived from the sale of pelts and of breeding stock of certain species naturally have greatly stimulated interest in the enterprise.

Judging from the information at hand, it is estimated that approximately 1,200 fur farmers are engaged in the production of one or more species of fur-bearing animals in the United States and Alaska. The majority of them, however, are raising silver and blue foxes. The total investment

in the business is somewhere between $12,000,000 and $15,000,000.

When it becomes stabilized, fur farming will be a commendable and hopeful adjunct to the fur industry and as such should be encouraged by all interested in the fur trade. That dishonest ranchers and companies should have used fur-bearing animals as a means to extract money from persons unfamiliar with the business was only to be expected. Such a condition is found in many other enterprises. The lack of authentic information concerning the raw fur market and the feeding, breeding and management of fur bearers in captivity has made the work of deceiving the novice extremely easy.

Raw fur dealers are inclined to look askance upon fur farming and to be skeptical as to its future. As long as the majority of persons engaged in fur farming continue to market only pelts of poor quality, which they are compelled to harvest simply because they can not sell inferior animals alive, raw fur dealers are justified in manifesting their present attitude.

When the main purpose of raising fur-bearing animals in captivity is lost sight of—that is, to produce saleable pelts—the business loses its economic basis for existence.

Ever since the beginning of time people have worn furs, and it is doubtful whether it will ever be desirable to place them in the discard. The fur business, therefore, has good reason for its existence.

The aim of the Biological Survey is not to antagonize the fur trade, but rather to assist and cooperate with it in helping bring about the maintenance of a constant supply of fur-bearing animals, not only for the few coming years, but for all succeeding generations.

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Station KSAC Broadcasting

(*From page* 9)

and design are a Friday feature.

The evening program, which has gained favor under the name of "College of the Air", provides any person within radio earshot of the college to earn a year's college credit if he has the ambition and capacity for work. The courses, which include Business English, Community Organization, Economics, English Literature, Journalism, General Psychology, Educational Sociology and Sociology, Educational Psychology and Vocational Education are adequate in every detail. Radio lectures are supplemented by home study and regular examinations are taken by students under the direction of county superintendents.

IN addition to the college credit courses there is an evening feature designated as Opportunity Talks. They include book reviews, current events, the English primer, brief lectures on etiquette, business, inventions, art, fashions and sports. Forty extension courses, covering the fields of agriculture, engineering, home economics, and general science, are given without college credit. The daily market review is sandwiched into the evening program, which is closed with a radio-telephone question box; lecturers answer questions phoned

to the station and this conversation is broadcast. Telephone exchanges have agreed to give their subscribers a certain number of free calls.

The Kansas State Agricultural College has followed the practice of enrolling those who desire to take advantage of the courses of instruction offered and this will be done again this fall. During 1924, 967 individuals enrolled and in 1925, 1,771. A most interesting observation is in the fact that in 1924 each individual took 2.5 courses on the average but in 1924-25 they took 6.8 courses and even though these courses might be considered somewhat technical, more than 15 per cent of those who enrolled in 1924 were enrolled in the second course.

PROBABLY the immense popularity of radio, as a method of giving instruction, may be accounted for by the fact that any program of service to any particular group of people which is broadcast will seek out those whom it will serve. One would hardly expect farmers to be interested in calisthenics offered primarily for public schools, it would be natural to assume that farmers get sufficient physical exercise in the daily routine of chores and other farm duties. However, the following is taken from a letter received last year from a farmer living in the central part of Kansas:

"We heartily endorse your opening exercises for common schools. We are boosters for a radio in every district. We even take the (calisthenics) exercises ourselves, with all our other work and find they do us good."

Another farmer writes in that the radio alone is responsible for convincing him that tankage is necessary for feeding protein to hogs. He writes as follows:

"Your radio talks convinced me that tankage is necessary to balance the ration in feeding hogs and by doing this that cheaper gains are made. Before I used tankage I fed corn and white shorts in a self feeder. I did not know that chickens would eat green alfalfa leaves. Station KSAC told me to keep a supply of alfalfa leaves before them. I tried this and was surprised at the amount they used in their daily feeds."

Any one will recognize that one of the greatest benefits in the contact between instructors and students is the inspiration afforded by this contact. The interest of another in one's routine problem is always a means of transmitting inspiration. Farm boys and girls whose contacts are more limited even than those of older people, may gain much in this way from radio. One farm woman from northeastern Kansas wrote as follows:

"The programs from your station are the most instructive of any we get over our radio, the lectures on subjects concerning agriculture are of a great benefit to everyone interested in those things. It would take the joy out of life for my oldest son should they be discontinued as he listens every evening that you broadcast."

Radio may hold an appeal for some because of the novelty it offers or to others because it affords possibilities of entertainment not heretofore available to rural communities, but the support given KSAC is because it contributes latest up-to-date information for business farmers. No effort has been made to take advantage of either novelty features or entertainment and the enthusiastic tone of the volume of approval is an expression of appreciation for the program of information to which station KSAC is dedicated.

Roads — and Monuments

(*From page* 4)

enough of the city to sicken him of it and make farming attractive by insidious comparison.

But the automobile could have done none of these things without the roads.

The cement road *a la* Leslie is more than a skid-proof, dustless, mudless, bumpless highway upon which men and merchandise hum to distant points. The road is a tie, a bond that pulls states and cities and human hearts together, wrapping them securely and with love into a compact bundle of unified ideas and sympathies.

WHEN, between New York and Philadelphia, one hundred and one years B.L. (before Leslie) a road was completed upon which stage coaches sped in the marvelous time of ten hours for the ninety miles, men wept with joy.

But now a silent eight in San Francisco slips down the road at dawn on Monday and arrives in New York Saturday night in time to deposit the driver at the door of the Silver Slipper *revue* at ten. And sympathetic hearts at the Golden Gate beat in unison with others at the end of the Sunrise Trail—the Nation is one, indivisible, cemented together with long solid links of portland.

Man is in process of development. What he will be we can but guess. But this we know; that good roads are making better men. "The first law is to be a healthy animal." And good roads are making men better animals. I realize that Gentle Reader now has the opportunity of swearing softly to himself, muttering, "Yes, I have just been missed by a few. I call them road-hogs."

But that is beside the fact.

The open road is giving us a new man. A man of cool nerves, quick wits, good lungs, finely coordinated muscles and hair-spring decision. Road judgment leads to better judgment on other things. Men are better animals—and as the body increases in vigor, the mind accumulates vitality.

IN the beginning, when to sit in a motor car and grin at ten miles an hour was regarded as a rare example of courage and fortitude, men waved to other men in their benzine buggies as they passed in a cloud of dust. The wave was accompanied by a smile of *camaraderie*—souls in tune were passing, and courtesy demanded recognition.

This gay habit passed, as the roads became more crowded. Men found they dared not raise their hands from the wheel to wave, else the wave might sweep over them as they sank for the last time in the restless sea of traffic.

The friendly wave of courtesy has become the raucous curse proclaiming the complete imbecility of the other chap who wilfully or thoughtlessly refuses to "move over!"

But this too will pass, and the more friendly wave will come back, as on the lake and sea today the great vessels hail the tiny skiff as they meet—and pass.

As the roads widen, time and energy now used in "keeping clear" will be used to think of the other fellow—and *camaraderie* will return.

GOOD roads—cement roads—are an investment for posterity. They are insurance premiums upon policies of future prosperity from which our grandchildren will reap annuities. The highway of today is the path down which generations yet unborn will glide to happiness.

The prophets who saw nothing but waste and extravagance in the

automobile and wanton disregard of economies in the huge investments in roads to run on have lived to see ushered in the greatest era of prosperity ever known by any Nation on this earth. Just what share the road and car have had in creating this golden harvest will never be known, but surely it is a large share.

Many of the things that were "going to happen" with the coming of good roads and the fleet flivver have never come to pass, thus proving again that most of our worries are phantoms.

Mail order men feared the horde of automobiles as the farmers on the Nile fear the angry hum of the approaching cloud of locusts.

"Give each farmer a car and fine roads to travel on and he will buy his needs in the nearest town. Ah! Woe are we! Our business will go to the dogs! *A bas* the fliv!"

But mail order sales creep constantly higher each month. The miles between farm and town have shrunk to minutes when laid out on the gleaming surface of the cement road. But the dire distress of the mail order man is still in the offing and may never materialize.

For the road and car have aided rather than harmed business. New wants have been created that must be met. New desires are formed that will be satisfied. Civilization inches up a notch and let out one hole in the belt. The void must be filled—and the merchant wins again.

AMERICANS are inordinately fond of erecting memorials to their hallowed dead. Every imposing spot is cluttered up with statues, tombs, towering shafts of granite and arches of marble and stone commemorating someone or something.

Millions of dollars are sunk in useless, albeit eye-pleasing, architectural concoctions of nothingness.

America is monument crazy.

A highway is a *real* monument. Every mile of good, wide, cement road is a monument to its creator and to its builder.

We cannot do better than to show our love for those of courage or extra merit than to plan and build horizontal monuments in their honor upon which those who come after can glide—and ponder.

Popular subscriptions for memorials are unusually successful in this country. My suggestion is this: Let the public subscribe to and build broad highways in everlasting stone and endow the strips of white road with the honored name of him to whom our gratitude should be shown.

We have the Lincoln Highway.

Let us have the Jones Highway, the Brown Highway. And instead of a meaningless crypt unseen except by the chattering and morbid, let us build the Unknown Soldier Boulevard from Atlanta to the Sea—or from Portland, Maine, to Portland, Oregon.

The world is full of roads.

The road to knowledge, the road to happiness, the road to a man's heart, the road to success, and the primrose path are all well sign posted.

But the best road of all is the beautiful, broad, cement highway that ribbons into the setting sun, that beckons and lures, that answers the universal plea, "I want to go somewhere!"

The cement road says: Come! I will show you America first! You shall glide freely, noiselessly, cheerfully, bumplessly, dustlessly, on—on—on!

COMMENT

We are reminded that in the old days life was what you made it; now it's what you make.

"Prohibition is held directly responsible for America's demand for jazz music," says a recent news dispatch from Washington. There have been some mighty mean things said about prohibition in the past few months, but heretofore they have always stopped short of calumny.

A New York department store is now handling Ford airplanes, but the most of us will put off purchasing one until the ten-cent stores sell them.

Many a man has been divorced because he replied sincerely when his wife asked what he thought of her new bob.

It's only a short time now until Congress meets again, and any little vices heretofore overlooked will be taken away from us then.

The big difference between being right and being President is not infrequently about $75,000 per year.

Jed Jimson wants his milk cows to be modern in every way, so he has put silk stockings on 'em and bobbed their tails.

A man should never be judged these days by the shabbiness of his furniture; it may be antique.

"Money's sure tight hereabouts, ain't it?" asked a new tenant.

"Yep," agreed the Extry Hand, "but not so tight as them that's got some."

* * *

It's strange how a modern farm boy can take part in every track meet and tennis tournament during the year, dance every night, play football all through four years of college, and still be made violently ill by the suggestion that he assist with the corn harvest.

* * *

Of all the road warnings described by Ted Butlar last month, none should be more effective than one in Oskaloosa, Iowa, which is simply a tombstone factory placed on the hither side of the railroad crossing.

* * *

Dr. Davis Wesson, former President of the American Institute of Chemical Engineers, announces that he has found a way to make synthetic beefsteak. It would be still more interesting if Dr. Wesson would discover a way to market some of the beef now being produced in the good old way.

* * *

Every dog has his day; every turkey his Thanksgiving.

Blind

This simple test shows that all of us are blind in some ways, even though our eyes are clear and sound.

For example:

Take your vest! One that you've worn many, many times, and ask yourself this question: How many button-holes are there on it?

You can't say how many until you've counted them, and yet, you have probably buttoned up that vest every morning and unbuttoned it every evening, several hundred times.

Most of us are the same. We see a thing without closely observing it. Students of human nature say that we oftentimes think of far-away things while reading a paper or book—our minds not thinking of what our eyes see.

How many of us, for example, remember what we saw on this page in the last issue, and in the two issues before? How many of us remember how Mr. Pitcher made $109.66 extra net profit per acre on strawberries?

Of course, we don't need to clutter up our minds with a lot of dates and records. But we should make note of good information—especially information that is connected with extra profit.

In this issue, and in succeeding issues of "Better Crops," you will see potash advertisements. In them, you will find facts which may be helpful to you in your work.

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